UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

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SUBJECT: Environmental Sampling Protocols for the ATSDR Tri-State Environmental/Blood-Metal Study

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TO: Brad Bradley
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I have prepared a set of environmental sampling protocols which I believe reflect the best methodology for obtaining unbiased environmental samples at the NL/Taracorp Superfund site in Granite City, IL. These protocols consists, for the most part, of methods extracted from the Tri-City Lead Soil Demonstration Study, but also include comments received from Fred Stallings at ATSDR, Renata Kimbrough, Tom Long and Dave Klatt (E & E).

It is my opinion that these protocols should be followed as closely as possible if the data provided to ATSDR is to be expected to give meaningful correlations between blood metal levels and environmental measurements.

We have discussed the issue of the appropriate method for obtaining water samples. I still believe that it is necessary to follow the new methodology specified in EPA's Final Rule for Lead and Copper in Drinking Water, Federal Register, June 7, 1991. While it is true that we cannot know exactly how often a resident child drinks first draw water, it is also more likely that he almost never drinks fully flushed water. The solubility of lead in drinking water is dependent on the corrositivity of the water and the temperature, and the concentration in water continues to increase with time. The lead solubility curve increases rapidly during the first few hours of stagnation. Therefore, the lead concentration in the water changes quickly during this time period, making it difficult to get an analytical measurement having any degree of precision - i.e., two successive 1 hour samples are likely to show a large amount of variation. The 6 hour stagnation sample was decided as a compromise between a high level (weekend stagnation sample as a worst case) and a variable 1-2 hour sample. In addition, experience in Cincinnati and other cities has shown that residents are capable of collecting a 6 hour stagnation water sample without tampering or otherwise contaminating the sample.

In all honesty, it is not likely that the water lead level will give a significant correlation with the blood lead level, given the high concentrations of lead expected in the soil, dust and paint. However, to chose a method which systematically reduces the contribution from this source may give the appearance to the PRPs and the public that EPA is biasing the study in favor of other sources of lead - namely, soil and housedust.

If you or the contractors have any questions concerning these protocols, please feel free to call me at (312) 886-4904.

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